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ABSTRACT

This study identifies the internal and external factors which differentiate women who enter male-traditional vocational training programs from those who enter female-traditional programs. Data were collected from 470 women enrolled in California vocational training programs. The sample was stratified on both social class and type of vocational training site--either secondary, Regional Occupational Centers/Programs (ROPs), or community college. Approximately equal numbers of women in male-dominated programs (nontraditionals) and female-dominated programs (traditionals) completed the self-administered questionnaire regarding (1) demographic/family background; (2) support/encouragement from others; (3) peer experience with nontraditional programs; and (4) personality and sex-role orientation. Results revealed the student subgroups differed most significantly in the amount of support, encouragement, and discouragement they received from the important others in their lives. Recommendations are made for steps which can be taken to improve educational quality and foster equality of educational opportunity. (Author)

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Factors Affecting Nontraditional Vocational Enrollments*

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Abstract

This study identified the internal and external factors which differentiate women who enter male-traditional vocational training programs from those who enter female-traditional programs. Data were collected from 470 women enrolled in California vocational training programs. The sample was stratified on both social class and type of vocational training site - - either secondary, ROP, or community college. Approximately equal numbers of women in male-dominated programs (Nontraditionals) and female-dominated programs (Traditionals) completed the self-administered questionnaire regarding: 1) demographic/family background; 2) support/encouragement from others; 3) peer experience with nontraditional programs, and 4) personality and sex-role orientation. Results revealed the student subgroups differed most significantly in the amount of support, encouragement, and discouragement they received from the important others in their lives. Recommendations are made for steps which can be taken to improve educational quality and foster equality of educational opportunity.

Factors Which Affect Nontraditional Vocational Enrollment among Women

An examination of the numerous influences upon an individual's career choice indicates that men and women are affected by both external factors, such as parents, peers and school personnel, and internal factors, such as family background, sex-role ideology, and achievement motivation. The research clearly indicates that the career choice process begins when children are quite young. By the time they are five, they have formed attitudes and an awareness of the world of work, and have developed opinions about the appropriateness of certain careers for members of each sex. As they get older they tend to base their career preferences upon these stereotypes (Kirchner and Vondracek, 1973; Marini, 1978; Siegel, 1973; Tibbits, 1975; Tully, Stephan and Chance, 1976). As a result, boys have been observed to select a wider variety of occupations than have girls when they are asked what they expect to do when they become adults (Brady and Brown, 1973). And girls have tended to focus their attention on marriage and family activities, rather than on employment (Iglitzen, 1973).

External Factors

Many studies indicate that parents affect their children's educational and occupational preferences and choices (Brown, 1970; Horner et al, 1967; Mitchell, 1977; Rehberg and Sinclair, 1970; Sewell and Shah, 1968a, 1968b). Studies of adolescents indicate parent-child relationships and family structures create substantial differences between adolescent boys and girls in their degree of autonomy, independence, self-regulation and assertiveness (Bardwick and Douvan, 1972). And women who were raised by working mothers have tended to be more career-oriented than those whose

mothers worked as homemakers, particularly if their mothers had a positive attitude toward their own employment (Hoffman, 1974; Klemmack and Edwards, 1973; Tangri, 1972).

Peers are another influence upon the career choice process (Penn and Gabriel, 1976). Young women have been observed to be particularly vulnerable to the influence of males in general, and especially to the influence of the significant men in their lives. This would appear to be a serious hinderance to their career aspirations, since the research indicates both young and older men tend to hold traditional attitudes toward women's roles. In one study (Entwisle and Greenberger, 1972) ninth grade boys were found to disapprove strongly of women holding "men's jobs." And another study of college students (Komarovsky, 1973) found men placed numerous restrictions upon their wives working outside the home. The young men indicated a woman with a preschool child should only work outside the home "...provided, of course, that the house is run smoothly, the children do not suffer, and the wife's job does not interfere with her husband's career." Furthermore, girls in nontraditional vocational training courses named male peers as their most frequent critics (Lewis and Kaltreider, 1976; Ott et al, 1980), but; at the same time, several studies have found that strong support and encouragement from significant males can be an important motivating factor in the pursuit of a career, particularly for women in nontraditional occupations (Hawley, 1972; Tangri, 1972; Trigg and Perlman, 1976).

Teachers' differential expectations and treatment of boys and girls also has a significant impact upon the students' sex-typed behaviors and attitudes. Chasen (1974), in a classroom observation study, noted that teachers discouraged aggression more often in pre-

kindergarten girls than in boys and directed boys and girls toward sex-typed activities. Boys were encouraged to play with blocks and do wood-work, whereas girls were encouraged to make collages and play in the doll corner.

The career guidance tests and the accompanying materials often used by counselors came under scrutiny a few years ago for sex bias (Birk, 1975). The finding of pervasive sex bias in the tests led the National Institute of Education to issue guidelines with respect to sex fairness in the tests, the technical information provided to counselors, and the interpretive materials provided to users of the tests.

Yet many counselors have continued to foster the current sex segregated labor force. They have tended to give less approval to women with nontraditional career goals than to those with conforming goals (Ott et al, 1980; Thomas and Stewart, 1971) and have discouraged young women from training for careers usually held by men (Casserly, 1975; Haven, 1971; Luchins, 1976; Schlossberg and Pietrofesa, 1974).

Internal Factors

Factors such as locus of control, fear of success, and sex-role orientation also affect an individual's work aspirations and choices. These internal factors are linked in complex ways and often interact with the previously discussed external dimensions.

Research supports the suggestion that achievement motivation is channeled differently in boys and girls from an early age. Girls do better on tasks defined as feminine or sex appropriate (Milton, 1959; Stein et al, 1971) and, as they grow older, are increasingly reluctant to directly compete with boys. As they reach adolescence, many girls perceive occupational success as negatively instrumental

to marriage, which for a female is a traditional measure of success. As a result, women often avoid success, as Horner has well determined (1968, 1969, 1970, 1972).

Another factor influencing future expectancies and subsequent achievement striving is the manner in which men and women account for their own successes or failures. A person may attribute success or failure to external factors (i.e., luck and task difficulty) or internal factors (i.e., effort and ability) (Holden and Rotter, 1962). Theoretically, maximum self-esteem and striving would be associated with a tendency to make internal attributions for success and external attributions for failure. Women, on the other hand, have been found to hold low estimates of their own abilities - - attributing success to external factors and failure to themselves. As a result, women are far less likely to continue striving than their male counterparts (Feather and Simon, 1973; Levine et al, 1976; Nicholls, 1975).

Sex-role orientation is yet another dimension influencing a young woman's career aspirations. Studies have shown that the more traditional one's sex-role orientation is, the more sex-typed his/her career choice tends to be (Davis et al, 1980; Zuckerman, 1976). This results from the tendency for highly sex-typed individuals to suppress any behavior which might be considered inappropriate for his/her sex (Kagan, 1964; Kohlberg, 1966).

The present study examines the relationship between traditionalism of career choice and several internal and external factors that are likely to affect such a choice. The enrollment by a woman in a vocational education program designed to prepare a student for a male-dominated occupation, such as carpentry, represents a nontraditional career choice by that woman. In the present study, women who had made such nontraditional choices are compared with those who have

made more traditional choices. Comparisons are made between the groups on potential external influences, such as the attitudes of other people close to them (e.g., parents, teachers, friends), as well as internal factors, such as sex-role orientation and fear of success. Such comparisons are expected to aid in explaining why some women choose traditionally feminine career goals, while others opt for careers that have traditionally been held by men.

Method

Four-hundred and seventy women enrolled in California public vocational training programs participated in the study. Approximately half of the women were currently enrolled in male-traditional programs (N=246) (i.e., Nontraditional) and the other half were in female-traditional programs (N=224) (i.e., Traditionals). A male/female-traditional program was considered for purposes of this study, to be a program where at least 80 percent of the students enrolled in California during 1977-78 were males/females respectively.

Among the 224 women enrolled in female-traditional programs, 117 had previously considered taking a male-traditional program, but had decided against it (i.e., Considereds). The respondents were an average of 20 years old and the sample was 73 percent white, 4 percent Black, 12 percent Hispanic, 2 percent Asian and 10 percent other. Their average family income was between $15,000 and $20,000 per year during 1979.

Sample Selection

The data were collected at nine separate sites in California -- three secondary, three Regional Occupational Centers/Programs and three community colleges. The sites were further stratified on the basis of socio-economic status, representing either lower, middle,

or upper income areas, from which an equal number of schools were selected.

The surveyed sites were randomly selected within each of the three income classifications from a sample pool of the forty-five sites with the largest numbers of women enrolled in male-traditional vocational training programs during the 1978-79 school year. At each site, a minimum of 20 women enrolled in a male-traditional program and another 20 enrolled in a female-traditional program completed a self-administered questionnaire.

Instrument

The self-administered questionnaire required approximately 45 minutes to complete. It included items reflecting four primary clusters of variables: 1) demographics/family background; 2) support/encouragement from important others to enroll in nontraditional programs; 3) peer experience with nontraditional programs; 4) personality and sex-role orientations.

Demographics/family background. Each respondent was asked a number of questions about her family background, such as what was the size of her family of origin, what were her parent's childrearing practices (e.g., demand for achievement, protectiveness), what was her parents' educational attainment, what was her mother's employment history (e.g., number of hours employed weekly, number of years employed, occupation, occupational prestige as assessed by the Duncan Socio-economic Index [see Reiss et al, 1961] and what was the respondent's age when her mother started working). Questions were also asked regarding the respondent's employment history and demographic background (e.g., age, ethnicity, marital status, and total family income).

Support/encouragement. A series of questions were designed to assess the amount of support and encouragement the respondent either actually received from "important others" (e.g., mother, father, sister, brother, girlfriend, boyfriend/husband, teacher, counselor) or expected to receive if she decided to enroll in a male-traditional vocational program. The respondents were first asked whether any of the above individuals had ever, 1) encouraged them to take or 2) had discouraged them from taking a class not usually taken by a woman. Then they were asked to rate, using a five-point scale from "1" equaling very unsupportive to "5" equaling very supportive, how supportive they felt each important other was or would be of their decision to enroll in a nontraditional class. The respondents were also asked whether a school counselor or teacher had ever given them the impression they would do well or poorly in a nontraditional program.

Peer experience. Respondents were asked whether any of their female friends, male friends, brothers or sisters had ever taken a course not usually taken by a member of their sex.

Personality and sex-role orientation. Commonly used psychological measures were employed to assess sex-role attitudes and other personality factors. To measure sex-role orientations, the Bem Sex-Role Inventory (BSRI) (Bem, 1974) was employed, which provides a self-report measure of masculinity and femininity. The difference between a person's endorsement of masculine and feminine personality characteristics allows for the classification of a person as being either masculine, feminine, androgynous or undifferentiated. Beckman's (1976) index of the perceived advantages and disadvantages of employment was used to measure work commitment. And measures designed to assess the internal factors of fear of succes (Zuckerman's Fear of Success Scale, Zuckerman and Allison, 1976) and locus of control (Rotter's Internal-External Control Scale, 1966) were also used.

Results

The assumption behind this research was that career decision-making is quite complex. It was contended that external factors (i.e., demographics, family background, support from important others, peer experience with nontraditional courses) and internal factors (i.e., personality and sex-role orientation) would together impact upon an individual's career decision-making. The goal of this research was to identify those variables which differentiate women students who enroll in male-dominated courses from those who continue taking female-traditional courses. To complete this task, the data were analyzed using a two-step process. First, a series of analyses of variance, chi-square, and t-tests were computed to identify those variables which significantly differentiate the student subgroups. The initial analyses uncovered 33 variables - - eight demographic variables, eighteen support variables, two peer experience variables, and five personality variables - - which differed between the Traditional and Nontraditional student groups at a minimum .10 level of significance.

Nontraditional versus Traditional Students

These thirty-three external and internal variables were included in two stepwise discriminant analyses contrasting the Nontraditional students with both the Traditionals and Considereds separately. Because those students who had at one time considered enrolling in a nontraditional program did not clearly fit into either the Traditional or Nontraditional subgroups, a separate subgroup of Considered students was formed. The creation of this subgroup allowed for the comparison of the Nontraditional students with both the Traditionals and Considereds separately.

The analyses were computed forcing three demographic/family background variables into the equation first, followed by the 33 independent variables of interest. The demographics forced into the analysis included ethnicity, socio-economic status and marital status. These variables were forced in for two reasons. First, previous research has shown that socio-economic status is related to certain psychological variables (see Evanoski and Maher, 1979) and thus we wished to control the impact of this variable upon both the dependent and independent variables. Second, because we wished to provide information which could be utilized with all students, not only those of a particular race or social class, these background variables were controlled in the analysis prior to the introduction of the 33 variables of interest.

As revealed in Table 1, the three demographic variables initially forced into the analysis accounted for less than two percent of the variance. After including the 33 variables in the analysis, a total of 16 variables entered the equation - - the three demographics forced into the equation followed by 13 independent variables with an F of 2.0 or higher. In total, approximately 41% of the variance was explained between the two groups and 84% of the Traditional students and 78% of the Nontraditional students were correctly classified.

INSERT TABLE 1 ABOUT HERE

The results clearly indicate that the Traditional students differ significantly from the Nontraditional students in terms of each of the four clusters of variables, but particularly in terms of the support and encouragement they have received from important others. The Nontraditional students received more support and encouragement

from female and male friends and family members, in addition to school personnel - - teachers and counselors. The Nontraditional students also had more friends who had enrolled in a course not usually taken by a woman, and they were currently employed more hours per week than the Traditional students. Finally, the students in male-dominated programs were also less traditional in their sex-role orientations than were the students in female-dominated programs, as evidenced by their higher masculinity and lower femininity scores on Bem's Sex-Role Inventory.

Nontraditional versus Considered Students

The above analyses was then repeated for the Nontraditional students and the 117 students who at one time considered enrolling in a male-dominated course, but never did (Considereds). As before, the data were examined forcing the three demographic/family background variables into the analysis first, followed by the 33 independent variables of interest.

As revealed in Table 2, the results show that there are numerous differences between the Nontraditional and Considered students. The four groups of variables included in the analysis - - demographics/family background, support/encouragement from important others, peer experience with nontraditional programs, and personality and sex-role orientation - - explained a large portion of the variance between the two groups. And, as with the earlier Traditional versus Nontraditional analysis, the demographic variables first forced into the equation explained only a minor portion of the variance between the two subgroups (approximately one percent). However, after including all of the 33 independent variables in the analysis, a total of 20 variables entered the equation. These were the three demographics

followed by 17 independent variables. In total, 28% of the variance was explained between the two groups and 73% of the Considered students and 77% of the Nontraditional students were correctly classified.

INSERT TABLE 2 ABOUT HERE

Once more, the data reveal sizable differences in the amount of support and encouragement the respondents received from important others. However, when these analyses are contrasted with the earlier ones for the Traditional versus Nontraditional students, the data point out that the amount of discouragement the student receives is also related to whether she decides to enroll in a nontraditional course. In the earlier analysis contrasting the Nontraditionals with the Traditionals, not one variable relating to discouragement from important others entered the equation. However, in this analysis, whether or not the student had been discouraged from taking a nontraditional course by her peers, teachers and/or counselor was highly correlated with whether or not she actually enrolled in the course. As would be expected, the students who actually enrolled in the nontraditional class tended to receive more support and less discouragement than those who elected not to enroll. Furthermore, when these analyses are compared with the earlier ones contrasting Traditional with Nontraditional students, it becomes apparent that the educational personnel exert a sizable amount of influence over the students' decision to actually enroll in a nontraditional program. In fact, support from school personnel explained the largest amount of variance between the Considered and Nontraditional students.

In terms of demographic differences, the mothers of the Nontraditionals had been employed for more years than the mothers of

the Considereds. And, as with the previous analysis, the students who actually enrolled in a nontraditional course tended to be less traditional in their sex-role ideology, as evidenced by their lower expectations of getting married, and more internal in their locus of control orientation than the students who had only considered enrolling in a nontraditional course.

Finally, when examining the two discriminant analyses, it becomes apparent that they differ in terms of both the number of steps in the equation and the amount of variance explained by a single variable. The Traditional versus Nontraditional analysis had fewer steps and the first variable to enter the equation - - "encouragement from females" - - explained 18% of the variance as contrasted with "supportiveness from school personnel" in the Considered versus Nontraditional analysis which explained only 5% of the variance between the two groups. This finding may be due to the fact that the Traditional versus Nontraditional analyses were computed excluding the Considereds, since it was felt that the Considered were not a unique group but rather had certain factors in common with both the Traditional and Nontraditional groups of students. These analyses seem to support this assumption.

Discussion

This study identified significant differences between women who enroll in a nontraditional program and those who continue to take courses which are dominated by females. It should be noted, however, that even though significant differences were observed between those in male-dominated programs and those in female-dominated programs, these findings reveal only the association between enrolling in a nontraditional program and the students' status with re-

spect to demographics/family background, support from important others, presence of role models, and both personality and sex-role orientation. What the true cause and effect relationship is cannot be determined. However, it is possible to speculate as to the cause of certain of these associations so that policy recommendations can be formulated.

The data revealed that the one dimension which most significantly differentiated Nontraditionals from both the Traditionals and Considereds was the amount of support and encouragement they received from the important others in their lives. The Nontraditional students consistently received more support from male and female friends and family members, in addition to teachers and counselors. In fact, the one variable indicating the amount of encouragement the respondents received from female friends and family members alone accounted for 18 percent of the variance between the Traditional and Nontraditional subgroups.

Some of the differences which were observed between the students are not easily subject to influence or modification (e.g., demographics and internal factors) and others are (e.g., degree of support and encouragement from family, friends and educational personnel). Since the most significant differences between the students who undertake nontraditional training and those who do otherwise is in terms of the amount of support, encouagement, and discouagement they receive from the important others in their lives, it is assumed that these individuals exert considerable influence upon a woman's career aspirations.

For the purpose of improving educational quality and fostering equality of educational opportunity, the attention of both policy makers and educational staff members should, therefore, be focused

upon educating the important others - - family members, friends, and educators - - of today's young men and women. These individuals should be made aware that the majority of today's women will hold jobs outside the home, and that many of these women will be the sole support of their families. As a result, these women will need to earn a respectable wage, and a nontraditional career offers them that opportunity. The influence of these individuals upon a student's career aspirations should be stressed and their assistance should be solicited in the recruitment of nontraditional students.

Table 1: Stepwise Discriminant Analysis for all Traditional versus Nontraditional Students

Variables in Order of Entry[b]	F to enter	U-Statistic[a] after entry	Mean Traditional N=129	Mean Nontraditional N=246
Socio-economic status (coded 1=lower, 2=middle, 3=upper)	2.45	.99	1.90	2.05
Marital status (coded 1=separated, divorced or widowed, 2=single or married	1.89	.99	1.78	1.85
Ethnicity (coded 1=white, 2=nonwhite)	1.06	.98	1.30	1.25
Encouragement from females[c]	73.86	.80	.49	1.52
Female friends' nontraditional enrollment (coded 1=yes, 2=no)	27.54	.74	1.58	1.22
Bem masculinity sum	15.26	.71	4.49	5.08
Number of hours currently worked	9.63	.69	9.22	15.94
Supportiveness from males[d]	7.84	.67	3.39	3.90
Bem femininity sum	9.63	.65	5.91	5.81
Encouragement from school personnel[e]	6.32	.64	.35	.86
			% Correctly Classified	
			83.80	77.60

[a]Only those variables which explained 1% or more of the variance are included in the table. At the end of the equation - - step 16 - - the obtained U-statistic was .59.

[b]Socio-economic status, marital status and ethnicity were forced into the equation first to control for their influence upon both the independent and dependent variables.

[c]Composed of the summation of the number of female friends and family members (i.e., girlfriend, mother and sister) who encouraged the respondent to enroll in a nontraditional course.

[d]Composed of the mean of the items describing the degree of support (from "1"=very unsupportive to "5"=very supportive) the respondent has received or perceives she would receive from both male friends and family members (i.e., boyfriend/husband, father, brother, male friends, male students) if she decided to enroll in a nontraditional class.

[e]Composed of the summation of items describing the number of school personnel (i.e., teacher, counselor) who encouraged the respondent to enroll in a nontraditional course.

Table 2: Stepwise Discriminant Analysis for all Considered versus Nontraditional Students[a]

Variables in Order of Entry[b]	F to enter	U-statistic after entry	Mean Considered (N=117)	Mean Nontraditional (N=246)
Ethnicity (coded 1=white, 2=nonwhite)	1.10	.99	1.26	1.20
Socio-economic status (coded 1=lower, 2=middle, 3=upper)	0.69	.99	1.97	2.05
Marital status (coded 1=separated, divorced or widowed, 2=single or married)	0.65	.99	1.82	1.85
Supportiveness from school personnel[c]	13.00	.94	3.76	4.17
Encouragement from peers[d]	11.46	.91	0.65	1.00
Number of years mother has worked	12.03	.87	6.31	9.07
Female friends' nontraditional enrollment (coded 1=yes, 2=no)	8.07	.84	1.38	1.23
Intention to get married (coded 1=do not expect to, to 5=definitely expect to)	6.14	.83	3.69	3.24
Supportiveness from females[e]	4.51	.81	3.98	4.09
Rotter locus of control sum (coded 0=internal, to 11=external)	4.40	.80	4.06	3.48
Counselor or teacher indicate R would do well (coded 0=no, 1=yes)	4.16	.79	0.42	0.67
Discouragement from peers[f]	4.00	.78	0.32	0.16
Discouragement from educational personnel[g]	4.98	.76	0.10	0.11
			% correctly classified	
			72.60	77.40

(footnotes on next page)

Table 2: (footnotes)

[a]Only those level 2 variables which explained 1% or more of the variance are included in the table. At the end of the equation - - step 20 - - the U-statistic was .72.

[b]Socio-economic status, marital status and ethnicity were forced into the equation first to control for their influence upon both the dependent and independent variables.

[c]Composed of the mean of the items describing the degree of support (from 1=very unsupportive to 5=very supportive) the respondent has received or perceives she would receive from educational staff members (i.e., teacher and counselor) if she decided to enroll in a nontraditional class.

[d]Composed of the summation of the number of peers (i.e., girlfriend, boyfriend/husband) who encouraged the respondent to enter a nontraditional course.

[e]Composed of the mean of the items describing the degree of support (from 1=very unsupportive to 5=very supportive) the respondent has received or perceives she would receive from female friends and family members (i.e., mother, sister, female friends, female students) if she decided to enroll in a nontraditional course.

[f]Composed of the summation of the number of peers (i.e., girlfriend, boyfriend/husband) who discouraged the respondent from enrolling in a nontraditional class.

[g]Composed of the summation of the number of educational staff members (i.e., teacher, counselor) who discouraged the respondent from enrolling in a nontraditional class.

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